

CLAIMS

1. A coupling element (30) for coupling a windshield wiper blade unit (14), which coupling element defines an upwardly open hollow housing (36) into which a connector (16) is disassemblably received for assembling to the end (12a) of a windshield wiper arm (12); and

which coupling element comprises two longitudinal side flanges (32) that are interconnected via a transverse rod (34) forming a transverse hinge axis (A) about which the connector (16) is hinged, a bottom wall (50), and two transverse webs, namely a front transverse web (46) and a rear transverse web (48), which webs interconnect respectively the associated front ends and the associated rear ends of the side flanges (32);

the side flanges (32), the transverse webs (46, 48), and the bottom wall (50) defining said upwardly open hollow housing (36) of the coupling element (30);

said coupling element being characterized in that it is provided with at least one channel (54, 56) putting the bottom of the hollow housing (36) into communication with the outside in the assembled position, enabling any liquid present on the top surface (50s) of the bottom wall (50) to be removed.

2. A coupling element (30) according to claim 1, characterized in that said at least one channel (54, 56) consists of an orifice (56) formed through the bottom wall (50) of the coupling element (30).

3. A coupling element (30) according to the preceding claim, characterized in that the channel (56) is situated longitudinally substantially in register with the transverse rod (34).

4. A coupling element (30) according to any preceding claim, characterized in that the channel (54) is provided at an interconnection corner at which a side flange (32) is connected to a vertical web (46) of the coupling element (30).

5. A coupling element (30) according the preceding claim, characterized in that the channel (54) is defined by a portion of

the associated top edge (32s, 46s) of the side flange (32) and of the front web (46), in which portion the height of each top edge (32s, 46s) decreases going towards said interconnection corner, so that the channel (54) substantially forms a V-shaped notch.

5 6. A coupling element (30) according to any preceding claim, of the type in which the wiper blade unit (14) comprises two aerodynamic elements (29) in the form of longitudinal section member segments of substantially constant vertical cross-section and that are arranged longitudinally in front of and behind the
10 coupling element (30);

 said coupling element being characterized in that the coupling element (30) is provided with two bottom recesses (60, 61), each of which is arranged in front of or behind the coupling element (30), and each of which receives the rear longitudinal end
15 (29a) or the front longitudinal end of the rear or of the front aerodynamic element (29), respectively.

 7. A coupling element (30) according to the preceding claim, characterized in that the coupling element (30) is provided with a front protuberance (62) which extends longitudinally
20 forwards from the front transverse web (46), and with a rear protuberance (63) that extends longitudinally rearwards from the rear transverse web (48), respectively, and in each of which protuberances a bottom recess (60, 61) is provided.

 8. A coupling element (30) according to the preceding
25 claim, characterized in that each bottom recess (60, 61) is of shape complementary to the shape of the longitudinal end (29a) of the associated aerodynamic element (29).

 9. A coupling element (30) according to the preceding claim, characterized in that the outside faces (62s, 63s) of each
30 protuberance (62, 63) are shaped similarly to the outside longitudinal faces of the associated aerodynamic (29) element.

 10. A coupling element (30) according to the preceding claim, taken in combination with claim 6, characterized in that the top edge (46s) of the front vertical web (46) is of shape identical

to the shape of the front protuberance (62), so that the top face (62s) of the front protuberance (62) is flush with the top edge (46s) of the front vertical web (46).

11. A coupling element (30) according to any preceding
5 claim, of the type in which the connector (16) has two longitudinal cheek plates (38) which are received between the side flanges (32), and each of which is extended longitudinally forwards by a longitudinal catch (44) for locking the end (12a) of the arm (12) in the assembled position in which it is assembled in the connector
10 (16);

said coupling element being characterized in that the inside vertical longitudinal face (32i) of each flange (32) is provided with a vertical groove (68) that is arranged longitudinally in register with the associated catch (44) of the connector (16).

15 12. A coupling element (30) according to the preceding claim, characterized in that the front vertical edge (68a) of the groove (68) is arranged longitudinally behind the free front longitudinal end (44a) of the associated catch (44) so that the free front longitudinal end (44a) of the catch (44) is in abutment
20 against the inside vertical longitudinal face (32i) of the associated flange (32).

13. A windshield wiper blade unit (14) including support spine members (20) for supporting a wiper blade (18), characterized in that it includes a coupling element (30) according
25 to any preceding claim and to which the support spine members (20) and the wiper blade (18) are fastened.

14. A windshield wiper (10) for a motor vehicle, said windshield wiper being characterized in that it includes a windshield wiper blade unit (14) according to the preceding claim
30 that is assembled to the front longitudinal end (12a) of a windshield wiper arm (12) such that said unit is hinged about the transverse axis (A), via a hinge and assembly connector (16) that is received disassemblably in the hollow housing (36) of the coupling element (30).